

# United States Patent Application

## COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA.

The specification of which was filed on June 1, 1998 as application serial no. 09/077,572.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (see page 4 attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

**No such applications have been filed.**

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

**No such applications have been filed.**

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Application No.</u>	<u>Filing Date</u>	<u>Status</u>
PCT/US96/18984	November 27, 1996	Complete
08/565,943	December 1, 1995	Pending

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Anglin, J. Michael	Reg. No. 24,916	Forrest, Bradley A.	Reg. No. 30,837	Lemaire, Charles A.	Reg. No. 36,198
Arora, Suneel	Reg. No. P-42,267	Hale, Jeffrey D.	Reg. No. 40,012	Litman, Mark A.	Reg. No. 26,390
Bernkopf, Paul A.	Reg. No. P-41,615	Harris, Robert J.	Reg. No. 37,346	Lundberg, Steven W.	Reg. No. 30,568
Bianchi, Timothy E.	Reg. No. 39,610	Hofmann, Rudolph P., Jr.	Reg. No. 38,187	McCrackin, Ann M.	Reg. No. P-42,858
Billion, Richard E.	Reg. No. 32,836	Holloway, Sheryl S.	Reg. No. 37,850	Polglaze, Daniel J.	Reg. No. 39,801
Brennan, Thomas F.	Reg. No. 35,075	Huebsch, Joseph C.	Reg. No. P-42,673	Schwegman, Micheal L.	Reg. No. 25,816
Brooks, Edward J., III	Reg. No. 40,925	Kalis, Janal M.	Reg. No. 37,650	Sieffert, Kent J.	Reg. No. 41,312
Clark, Barbara J.	Reg. No. 38,107	Klima-Silberg, Catherine I.	Reg. No. 40,052	Slifer, Russell D.	Reg. No. 39,838
Drake, Eduardo E.	Reg. No. 40,594	Kluth, Daniel J.	Reg. No. 32,146	Terry, Kathleen R.	Reg. No. 31,884
Dryja, Michael A.	Reg. No. 39,662	Lacy, Rodney L.	Reg. No. 41,136	Viksins, Ann S.	Reg. No. 37,748
Embreton, Janet E.	Reg. No. 39,665	Leffert, Thomas W.	Reg. No. 40,697	Woessner, Warren D.	Reg. No. 30,440
Fogg, David N.	Reg. No. 35,138				

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:

P.O. Box 2938, Minneapolis, MN 55402  
Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1 : Michael A. Apicella

Citizenship: United States of America

Residence: Solon, IA

Post Office Address: 2646 Johnsons Crossing, N.E.  
Solon, IA 52333

Signature: \_\_\_\_\_

Michael A. Apicella

Date: \_\_\_\_\_

Full Name of joint inventor number 2 : Melvin G. Sunshine

Citizenship: United States of America

Residence: Iowa City, IA

Post Office Address: 340 Raven Street  
Iowa City, IA 52245

Signature: \_\_\_\_\_

Melvin G. Sunshine

Date: \_\_\_\_\_

Full Name of joint inventor number 3 : Na-Gyong Lee

Citizenship: Korea

Residence: Incheon, Korea

Post Office Address: Apartment 27-1309  
Nam-gu Hakik-2-dong  
Sindong-a  
Incheon  
Korea

Signature: \_\_\_\_\_

Na-Gyong Lee

Date: \_\_\_\_\_

Full Name of joint inventor number 4 : Rasappa Arumugham

Citizenship: India

Residence: Pittsford, NY

Post Office Address: 15 Elatia Circle  
Pittsford, NY 14534

Signature: X \_\_\_\_\_

Rasappa Arumugham

Date: July 31, 1998

☒ Additional inventors are being named on separately numbered sheets, attached hereto.

Our Ref. 875.001US2  
 Serial No. 09/077,572  
 Filing Date: June 1, 1998

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 5 : Bradford W. Gibson  
 Citizenship: United States of America  
 Post Office Address: 1324 Peralta Avenue  
Berkeley, CA 94702

Residence: Berkeley, CA

Signature: \_\_\_\_\_

Bradford W. Gibson

Date: \_\_\_\_\_

Full Name of inventor:  
 Citizenship:  
 Post Office Address:

Residence:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Full Name of inventor:  
 Citizenship:  
 Post Office Address:

Residence:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Full Name of inventor:  
 Citizenship:  
 Post Office Address:

Residence:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

0001 100 61 014109055120  
§ 1.97(b)(1) Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

**United States Patent Application****COMBINED DECLARATION AND POWER OF ATTORNEY**

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA**.

The specification of which was filed on June 1, 1998 as application serial no. 09/077,572.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (see page 4 attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

**No such applications have been filed.**

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

**No such applications have been filed.**

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Application No.</u>	<u>Filing Date</u>	<u>Status</u>
PCT/US96/18984	November 27, 1996	Complete
08/565,943	December 1, 1995	Pending

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Anglin, J. Michael	Reg. No. 24,916	Forrest, Bradley A.	Reg. No. 30,837	Lemaire, Charles A.	Reg. No. 36,198
Arora, Suneel	Reg. No. P-42,267	Hale, Jeffrey D.	Reg. No. 40,012	Litman, Mark A.	Reg. No. 26,390
Bernkopf, Paul A.	Reg. No. P-41,615	Harris, Robert J.	Reg. No. 37,346	Lundberg, Steven W.	Reg. No. 30,568
Bianchi, Timothy E.	Reg. No. 39,610	Hofmann, Rudolph P., Jr.	Reg. No. 38,187	McCrackin, Ann M.	Reg. No. P-42,858
Billion, Richard E.	Reg. No. 32,836	Holloway, Sheryl S.	Reg. No. 37,850	Polglaze, Daniel J.	Reg. No. 39,801
Brennan, Thomas F.	Reg. No. 35,075	Huebsch, Joseph C.	Reg. No. P-42,673	Schwegman, Micheal L.	Reg. No. 25,816
Brooks, Edward J., III	Reg. No. 40,925	Kalis, Janal M.	Reg. No. 37,650	Sieffert, Kent J.	Reg. No. 41,312
Clark, Barbara J.	Reg. No. 38,107	Klima-Silberg, Catherine I.	Reg. No. 40,052	Slifer, Russell D.	Reg. No. 39,838
Drake, Eduardo E.	Reg. No. 40,594	Kluth, Daniel J.	Reg. No. 32,146	Terry, Kathleen R.	Reg. No. 31,884
Dryja, Michael A.	Reg. No. 39,662	Lacy, Rodney L.	Reg. No. 41,136	Viksins, Ann S.	Reg. No. 37,748
Embretson, Janet E.	Reg. No. 39,665	Leffert, Thomas W.	Reg. No. 40,697	Woessner, Warren D.	Reg. No. 30,440
Fogg, David N.	Reg. No. 35,138				

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:

P.O. Box 2938, Minneapolis, MN 55402

Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1 : Michael A. Apicella

Citizenship: United States of America

Residence: Solon, IA

Post Office Address: 2646 Johnsons Crossing, N.E.  
Solon, IA 52333

Signature: \_\_\_\_\_

Michael A. Apicella

Date: \_\_\_\_\_

Full Name of joint inventor number 2 : Melvin G. Sunshine

Citizenship: United States of America

Residence: Iowa City, IA

Post Office Address: 340 Raven Street  
Iowa City, IA 52245

Signature: \_\_\_\_\_

Melvin G. Sunshine

Date: \_\_\_\_\_

Full Name of joint inventor number 3 : Na-Gyong Lee

Citizenship: Korea

Residence: Incheon, Korea

Post Office Address: Apartment 27-1309  
Nam-gu Hakik-2-dong  
Sindong-a  
Incheon  
Korea

Signature: \_\_\_\_\_

Na-Gyong Lee

Date: \_\_\_\_\_

Full Name of joint inventor number 4 : Rasappa Arumugham

Citizenship: India

Residence: Pittsford, NY

Post Office Address: 15 Elatia Circle  
Pittsford, NY 14534

Signature: \_\_\_\_\_

Rasappa Arumugham

Date: \_\_\_\_\_

☒ Additional inventors are being named on separately numbered sheets, attached hereto.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

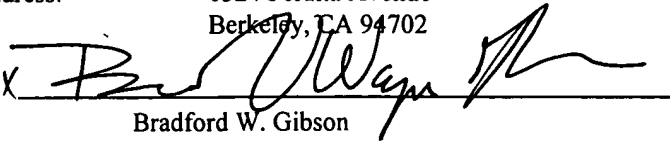
Full Name of joint inventor number 5: **Bradford W. Gibson**

Citizenship: **United States of America**

Residence: **Berkeley, CA**

Post Office Address: **1324 Peralta Avenue**

**Berkeley, CA 94702**

Signature: 

**Bradford W. Gibson**

Date:  **Sept. 16, 1998**

Full Name of inventor:

Citizenship:

Residence:

Post Office Address:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Full Name of inventor:

Citizenship:

Residence:

Post Office Address:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Full Name of inventor:

Citizenship:

Residence:

Post Office Address:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.



# United States Patent Application

## COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: NON-TOXIC MUTANTS OF PATHOGENIC GRAM-NEGATIVE BACTERIA.

The specification of which was filed on June 1, 1998 as application serial no. 09/077,572.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (see page 4 attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

**No such applications have been filed.**

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

**No such applications have been filed.**

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Application No.</u>	<u>Filing Date</u>	<u>Status</u>
PCT/US96/18984	November 27, 1996	Complete
08/565,943	December 1, 1995	Pending

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Anglin, J. Michael	Reg. No. <u>24,916</u>	Forrest, Bradley A.	Reg. No. <u>30,837</u>	Lemaire, Charles A.	Reg. No. <u>36,198</u>
Arora, Suneel	Reg. No. <u>P-42,267</u>	Hale, Jeffrey D.	Reg. No. <u>40,012</u>	Litman, Mark A.	Reg. No. <u>26,390</u>
Bernkopf, Paul A.	Reg. No. <u>P-41,615</u>	Harris, Robert J.	Reg. No. <u>37,346</u>	Lundberg, Steven W.	Reg. No. <u>30,568</u>
Bianchi, Timothy E.	Reg. No. <u>39,610</u>	Hofmann, Rudolph P., Jr.	Reg. No. <u>38,187</u>	McCrackin, Ann M.	Reg. No. <u>P-42,858</u>
Billion, Richard E.	Reg. No. <u>32,836</u>	Holloway, Sheryl S.	Reg. No. <u>37,850</u>	Polglaze, Daniel J.	Reg. No. <u>39,801</u>
Brennan, Thomas F.	Reg. No. <u>35,075</u>	Huebsch, Joseph C.	Reg. No. <u>P-42,673</u>	Schwegman, Micheal L.	Reg. No. <u>25,816</u>
Brooks, Edward J., III	Reg. No. <u>40,925</u>	Kalis, Janal M.	Reg. No. <u>37,650</u>	Sieffert, Kent J.	Reg. No. <u>41,312</u>
Clark, Barbara J.	Reg. No. <u>38,107</u>	Klima-Silberg, Catherine I.	Reg. No. <u>40,052</u>	Slifer, Russell D.	Reg. No. <u>39,838</u>
Drake, Eduardo E.	Reg. No. <u>40,594</u>	Kluth, Daniel J.	Reg. No. <u>32,146</u>	Terry, Kathleen R.	Reg. No. <u>31,884</u>
Dryja, Michael A.	Reg. No. <u>39,662</u>	Lacy, Rodney L.	Reg. No. <u>41,136</u>	Viksins, Ann S.	Reg. No. <u>37,748</u>
Embretson, Janet E.	Reg. No. <u>39,665</u>	Leffert, Thomas W.	Reg. No. <u>40,697</u>	Woessner, Warren D.	Reg. No. <u>30,440</u>
Fogg, David N.	Reg. No. <u>35,138</u>				

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:

P.O. Box 2938, Minneapolis, MN 55402

Telephone No. (612)373-6900

34

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1-00  
Full Name of joint inventor number 1 : Michael A. Apicella  
Citizenship: United States of America  
Post Office Address: 2646 Johnsons Crossing, N.E.  
Solon, IA 52333

Residence: Solon, IA

Signature: \_\_\_\_\_

Michael A. Apicella

Date: \_\_\_\_\_

July 30, 1998

2-00  
Full Name of joint inventor number 2 : Melvin G. Sunshine  
Citizenship: United States of America  
Post Office Address: 340 Raven Street  
Iowa City, IA 52245

Residence: Iowa City, IA

Signature: \_\_\_\_\_

Melvin G. Sunshine

Date: \_\_\_\_\_

July 30, 1998

3-00  
Full Name of joint inventor number 3 : Na-Gyong Lee  
Citizenship: Korea  
Post Office Address: Apartment 27-1309  
Nam-gu Hakik-2-dong  
Sindong-a  
Incheon  
Korea

Residence: Incheon, Korea

Signature: \_\_\_\_\_

Na-Gyong Lee

Date: \_\_\_\_\_

August 11, 1998

4-00  
Full Name of joint inventor number 4 : Rasappa Arumugham  
Citizenship: India  
Post Office Address: 15 Elatia Circle  
Pittsford, NY 14534

Residence: Pittsford, NY

Signature: \_\_\_\_\_

Rasappa Arumugham

Date: \_\_\_\_\_

☒ Additional inventors are being named on separately numbered sheets, attached hereto.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

500  
Full Name of joint inventor number 5 : Bradford W. Gibson  
Citizenship: United States of America  
Post Office Address: 1324 Peralta Avenue  
Berkeley, CA 94702

Residence: Berkeley, CA CK

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Bradford W. Gibson

Full Name of inventor:  
Citizenship:  
Post Office Address:

Residence:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name of inventor:  
Citizenship:  
Post Office Address:

Residence:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name of inventor:  
Citizenship:  
Post Office Address:

Residence:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.